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*Patent foramen ovale – anatomical base of paradoxical embolism of child and youth*

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There is no doubt that there are a lot of different etiological factors and pathological mechanisms in the developing of stroke and this fact lead us to make a modern classification of this kind of stroke. There are 3 main pathogenetic links in the cerebral embolism process: donor parent, blockader's migration and recipient artery. Now we know about 30 potential embolism sources. They divided on 3 main types: pathology of chambers of heart, valve diseases and some variants of paradoxical embolism. So we see that either neurovisualization or heart disease diagnostic is very important. Practical applications in the clinical angioneurology a lots of cardiologic diagnostic methods (EKG, echocardiogram, Holter monitoring) help us to understand a heart role in the pathogenic mechanism of stroke. And now we want to examine the patent foramen ovale problem – one of the unusual causes of cardiocerebral embolism. Patent foramen ovale (PFO) – is a defect located in atrial septum and plays a great role during fetal circulation. However, about 17 – 35 % of the general population the foramen ovale remains open after birth. In some cases, when the pressure in the right atrium becomes intermittently higher, than in the left atrium, for those moments the foramen ovale is open and blood can again flow from the right to the left atrium. This is the most important mechanism of paradoxical embolism. 15 patients (7 children from 14 to 18 years old and 8 young man at the age of 18 to 31) were under our care. All of them we perform MRI, ultrasound imaging neck and brain vessels, EKG, echocardiogram and Holter monitoring. As a result we consider that the PFO combines with a cardiac conduction system, migraine and tortuosity of carotid and vertebral arteries. And we must take into consideration this pathology during observation such patients.

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*Clinical practice of thrombolytic therapy for ischemic stroke in the large industrial city*

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The correlation between ischemic and hemorrhagic stroke is 4:1; so the first one become the most medical and social problem. Mariupol is one of the largest industrial centers in Ukraine. It's population is about 500.000 inhabitants. For last 10 years we find out an incidence rate of stroke. In spite of importance a primary prevention, improvement of the existing medical care system for stroke patients, which will help us to decrease stroke mortality, stroke case fatality and disability. In order to equip with high efficacy treatment methods of ischemic stroke the center of thrombolytic therapy was founded on the base of the hospital № 5. We performed 5 thrombolyses: 4- atherosclerotic, 1- cardioembolic (m.-3, w.-2; at the age of from 49 to 69). We use i.v. tPA(Actylise ®). All cases were successful: no hemorrhage and 4 our patients return working.

But there were several difficulties in our work. Thrombolysis – not a panacea, it is only symptomatic therapy for ischemic stroke and rather dangerous. According findings cardioembolic ischemic stroke accounts for approximately 20% of all strokes and it has tendency toward hemorrhagic transformation. So we see that thrombolytic therapy of this stroke type is very dangerous. There is no doubt that is very difficult, sometimes impossible to arrange a type of ischemic stroke, that's why in our opinion before thrombolytic therapy starting we must do the patient not only CAT, ECG and echocardiogram too in order to detect heart pathology (atrial fibrillation, myocardial infarction, decrease of the left ventricular ejection fraction) which may increase risk of hemorrhage and reocclusion. And we mustn't forget about neuroprotection, which is very compound and various, but it helps us to reduce infarct area, stretch a period of therapeutic window, protect the brain from reperfusion damage.